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# Claims

[c1] I claim as my invention:

1. A golf club head comprising:

a body having a crown, a sole, a ribbon and a front wall with an opening, the crown having a thickness of 0.035 inch to 0.045 inch, the sole having a thickness of 0.035 inch to 0.045 inch, the body composed of a cast titanium alloy material, the crown, the sole, the ribbon and the front wall defining a hollow interior; and

a striking plate insert comprising a first layer and a second layer, the first layer composed of titanium material, the first layer providing an outer striking face of the golf club head, the second layer composed of an aluminum material and having a lower yield strength than the yield strength of the first layer, the first layer and the second layer joined by an explosion bonding process, whereby the yield strength of the striking plate insert in its entirety is greater than the yield strength of each of the first layer and the second layer; and

an internal hosel positioned within the hollow interior of the body, the interior hosel extending from the crown toward the sole,

wherein the golf club head has a volume ranging from

200 cubic centimeters to 500 cubic centimeters, a mass less than 225 grams, a height ranging from 2.0 inches to 3.5 inches, a width ranging from 4.0 inches to 5.0 inches, a coefficient of restitution ranging from 0.82 to 0.94, a moment of inertia, Izz, about the Z axis through the center of gravity of the golf club head ranging from 3400g-$cm^2$ to 3900g-$cm^2$.

[c2] 2. The golf club head according to claim 1 wherein the striking plate insert further comprises a third layer composed of titanium material, wherein the second layer is disposed between the third layer and the first layer, and whereby the third layer and the second layer are joined by an explosion bonding process.

[c3] 3. A golf club head comprising:
a body having a crown, a sole, a ribbon, and a front wall with an opening, the crown having a thickness of 0.035 inch to 0.045 inch, the sole having a thickness of 0.035 inch to 0.045 inch, the body composed of a cast metal material, the crown, the sole, the ribbon and the front wall defining a hollow interior; and
a striking plate insert comprising a first layer providing an outer striking face of the golf club head and a second layer having a lower yield strength than the yield strength of the first layer, the first layer joined to the second layer by an explosion bonding process;

wherein the golf club head has a volume ranging from at least 360 cubic centimeters, a mass ranging from 180 grams to 215 grams, a height ranging from 2.0 inches to 3.5 inches, a width ranging from 4.0 inches to 5.0 inches, a depth ranging from 3.0 inches to 4.5 inches, a coefficient of restitution ranging from 0.82 to 0.94; and a moment of inertia, Izz, about the Z axis through the center of gravity of the golf club head ranging from 3400g-$cm^2$ to 3900g-$cm^2$.

[c4] 4. The golf club head according to claim 3 wherein the body is composed of a cast titanium alloy material, the first layer of the striking plate insert is composed of titanium alloy material, and the second layer of the striking plate insert is composed of an aluminum material.

[c5] 5. The golf club head according to claim 3 wherein the body is composed of a cast steel alloy material, the first layer of the striking plate insert is composed of a stainless steel material, and the second layer of the striking plate insert is composed of an aluminum material.

[c6] 6. The golf club head according to claim 3 wherein the striking plate insert further comprises a third layer composed of titanium material, the second layer disposed between the third layer and the first layer, the third layer joined to the second layer by an explosion bonding pro-

cess.

[c7] 7. A golf club head comprising:
a body having a crown and a sole, and a front wall with an opening; and
a striking plate insert comprising a first layer providing an outer striking face of the golf club head and a second layer having a lower yield strength than the yield strength of the first layer, the first layer joined to the second layer by an explosion bonding process, the first layer having a thickness ranging from 0.050 inch to 0.150 inch, and the second layer having a thickness ranging from 0.050 inch to 0.150 inch;
wherein the golf club head has a volume ranging from at least 300 cubic centimeters to 500 cubic centimeters, a coefficient of restitution ranging from 0.80 to 0.94; and a moment of inertia, Izz, about the Z axis through the center of gravity of the golf club head greater than 3000g-$cm^2$.

[c8] 8. The golf club head according to claim 7 wherein the body is composed of a cast titanium alloy material, the first layer of the striking plate insert is composed of titanium alloy material, and the second layer of the striking plate insert is composed of an aluminum material.

[c9] 9. The golf club head according to claim 7 wherein the

body is composed of a cast steel alloy material, the first layer of the striking plate insert is composed of steel alloy material, and the second layer of the striking plate insert is composed of an aluminum material.

[c10] 10. A golf club head comprising:
a body having a crown and a sole, and a front wall with an opening; and
a striking plate insert comprising a first layer providing an outer striking face of the golf club head, a second layer having a lower yield strength than the yield strength of the first layer, and a third layer welded to the second layer, the first layer, the second layer and the third layer joined by an explosion bonding process, the first layer having a thickness ranging from 0.050 inch to 0.150 inch, the second layer having a thickness ranging from 0.050 inch to 0.150 inch, and the third layer having a thickness ranging from 0.050 inch to 0.150 inch;
wherein the golf club head has a volume ranging from at least 300 cubic centimeters to 500 cubic centimeters, a coefficient of restitution ranging from 0.80 to 0.94; and
a moment of inertia, Izz, about the Z axis through the center of gravity of the golf club head greater than 3000g-$cm^2$.

[c11] 11. The golf club head according to claim 10 wherein the body is composed of a cast titanium alloy material, the

first layer of the striking plate insert is composed of titanium alloy material, the second layer of the striking plate insert is composed of an aluminum material, and the third layer of the striking plate insert is composed of titanium alloy material.

[c12] 12. The golf club head according to claim 10 wherein the body is composed of a cast steel alloy material, the first layer of the striking plate insert is composed of steel alloy material, the second layer of the striking plate insert is composed of an aluminum material, and the third layer of the striking plate insert is composed of steel alloy material.

[c13] 13. The golf club head according to claim 10 wherein the body is composed of a cast steel alloy material, the first layer of the striking plate insert is composed of steel alloy material, the second layer of the striking plate insert is composed of a titanium material, and the third layer of the striking plate insert is composed of steel alloy material.

[c14] 14. The golf club head according to claim 10 wherein the body is composed of a cast titanium alloy material, the first layer of the striking plate insert is composed of beryllium copper material, the second layer of the striking plate insert is composed of an aluminum material,

and the third layer of the striking plate insert is composed of beryllium copper material.

[c15] 15. The golf club head according to claim 10 wherein the body is composed of a cast titanium alloy material, the first layer of the striking plate insert is composed of forging brass material, the second layer of the striking plate insert is composed of an aluminum material, and the third layer of the striking plate insert is composed of forging brass material.

[c16] 16. The golf club head according to claim 10 wherein the body is composed of a cast steel alloy material, the first layer of the striking plate insert is composed of steel alloy material, the second layer of the striking plate insert is composed of an aluminum material, and the third layer of the striking plate insert is composed of aluminum material.

[c17] 17. A method for manufacturing a golf club head having a laminated striking plate insert for a golf club head, comprising:
explosion bonding a first layer to a second layer to form the laminated striking plate insert, the first layer being composed of a material having higher yield strength than the yield strength of the second layer;
casting a body for a golf club head from a metal mate-

rial, the body having a crown, a sole, and a front wall with an opening, the crown, the sole and the front wall defining a hollow interior; and

securing the laminated striking plate insert to the body to cover the opening in the front wall of the body.

[c18] 18. The method according to claim 17 further comprising explosion bonding a third layer to the second layer.

[c19] 19. The method according to claim 17 wherein the first layer of the striking plate insert is composed of a titanium alloy material or a stainless steel material.

[c20] 20. The method according to claim 17 wherein securing the laminated striking plate insert comprises welding the laminated striking plate insert to the body.